

**Public Services**

Engineering  
212 Operations Center Drive  
Wilmington, NC 28412  
910 341-7807  
910 341-5881 fax  
wilmingtonnc.gov  
Dial 711 TTY/Voice

December 17, 2014

Mr. Barnes Boykin  
Eastern Pride, Inc.  
2405-F Nash Street  
Wilson, NC 27896

**Subject: Stormwater Management Permit No. 2014016R1  
Family Dollar - Wooster Street  
High Density Permit Revision**

Dear Mr. Boykin:

The City of Wilmington Engineering Division has received a request for a revision to the Stormwater Management Permit for Family Dollar on Wooster St. Having reviewed the application and all supporting materials, the City of Wilmington has determined that the proposed revision meets the requirements of the City of Wilmington's Comprehensive Stormwater Ordinance.

The revisions include:

- Parking configuration changes
- Stormwater control measure configuration changes
- landscape changes

Please be aware all terms and conditions of the permit 7/25/2014 remain in full force and effect. Any additional changes to the approved plans must be approved by this office prior to construction. The issuance of the plan revision does not preclude the permittee from complying with all other applicable statutes, rules, regulations or ordinances which may have jurisdiction over the proposed activity, and obtaining a permit or approval prior to construction.

The revised stamped, approved stormwater management drawings will be released for construction by the Wilmington Planning Division under separate cover. Please replace any old plan sheets from the approved set with the new, revised sheet. An electronic copy of the approved drawing set, permit, application and supplementary documents will be maintained by the Wilmington Engineering Division. If you have any questions, or need additional information, please contact Robert Gordon at (910) 341-5856 or [rob.gordon@wilmingtonnc.gov](mailto:rob.gordon@wilmingtonnc.gov)

Sincerely,

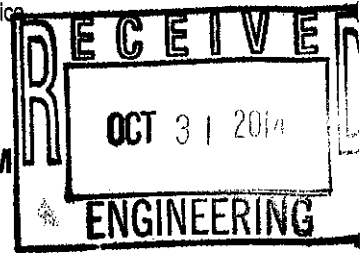
for Sterling Cheatham, City Manager  
City of Wilmington

cc: Marie Peedin PE, Pamlico Engineering  
Kathryn Thurston, Wilmington Development Services/Planning



Public Services  
Engineering  
414 Chestnut St, Suite 200  
Wilmington, NC 28401  
910 341-7807  
910 341-5881 fax  
wilmingtonnc.gov  
Dial 711 TTY/Voice

RECEIVED



**STORMWATER MANAGEMENT PERMIT APPLICATION FORM**  
(Form SWP 2.2)

**I. GENERAL INFORMATION**

1. Project Name (subdivision, facility, or establishment name - should be consistent with project name on plans, specifications, letters, operation and maintenance agreements, etc.):

Family Dollar - Wooster Street

2. Location of Project (street address):

709 S. 16th Street

City: Wilmington County: New Hanover Zip: 28402

3. Directions to project (from nearest major intersection):

Located at the intersection of Wooster Street and 16th & 17th Streets

**II. PERMIT INFORMATION**

1. Specify the type of project (check one): ☐ Low Density ☒ High Density  
☐ Drains to an Offsite Stormwater System ☐ Drainage Plan ☐ Other  
If the project drains to an Offsite System, list the Stormwater Permit Number(s):

City of Wilmington: \_\_\_\_\_ State - NCDENR/DWQ: \_\_\_\_\_

2. Is the project currently covered (whole or in part) by an existing City or State (NCDENR/DWQ) Stormwater Permit? ☐ Yes ☒ No

If yes, list all applicable Stormwater Permit Numbers:

City of Wilmington: \_\_\_\_\_ State - NCDENR/DWQ: \_\_\_\_\_

3. Additional Project Permit Requirements (check all applicable):

☐ CAMA Major ☒ Sedimentation/Erosion Control

☐ NPDES Industrial Stormwater ☐ 404/401 Permit: Proposed Impacts: \_\_\_\_\_

If any of these permits have already been acquired please provide the Project Name, Project/Permit Number, issue date and the type of each permit:

### III. CONTACT INFORMATION

1. Print Applicant / Signing Official's name and title (specifically the developer, property owner, lessee, designated government official, individual, etc. who owns the project):

Applicant / Organization: Eastern Pride, Inc.

Signing Official & Title: Barnes Boykin, Vice President/Secretary

- a. Contact information for Applicant / Signing Official:

Street Address: 2405-F Nash Street

City: Wilson State: NC Zip: 27896

Phone: 252-230-0632 Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Mailing Address (if different than physical address): \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

- b. Please check the appropriate box. The applicant listed above is:

- ☐ The property owner (Skip to item 3)  
☐ Lessee\* (Attach a copy of the lease agreement and complete items 2 and 2a below)  
☐ Purchaser\* (Attach a copy of the pending sales agreement and complete items 2 and 2a below)  
☒ Developer\* (Complete items 2 and 2a below.)

2. Print Property Owner's name and title below, if you are the lessee, purchaser, or developer. (This is the person who owns the property that the project is on.)

Property Owner / Organization: Thomason Realty Investment, Ltd.

Signing Official & Title: Fannie Thomason (via Kirby Tyson)

- a. Contact information for Property Owner:

Street Address: 910 N. Sandhills Blvd.

City: Aberdeen State: NC Zip: 28315

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Mailing Address (if different than physical address): \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

3. (Optional) Print the name and title of another contact such as the project's construction supervisor or another person who can answer questions about the project:

Other Contact Person / Organization: Stocks & Taylor Construction Co.

Signing Official & Title: Bryan Stocks, Vice-President

a. Contact information for person listed in item 3 above:

Street Address: 1825 Carolina Avenue

City: Washington State: NC Zip: 27889

Phone: 252-975-5855 Fax: \_\_\_\_\_ Email: bstocks@stockstaylor.com

Mailing Address (if different than physical address): \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

#### IV. PROJECT INFORMATION

1. In the space provided below, briefly summarize how the stormwater runoff will be treated.

Stormwater shall infiltrate through pervious pavement and infiltrate into the existing soils.

All storm events over the 5 yr. 24 hr. event shall overflow into a grass detainment area.

2. Total Property Area: 65,776 square feet

3. Total Coastal Wetlands Area: \_\_\_\_\_ square feet

4. Total Surface Water Area: \_\_\_\_\_ square feet

5. Total Property Area (2) – Total Coastal Wetlands Area (3) – Total Surface Water Area (4) = Total Project Area: 65,776 square feet.

6. Existing Impervious Surface within Property Area: 99 square feet

7. Existing Impervious Surface to be Removed/Demolished: 99 square feet

8. Existing Impervious Surface to Remain: 0 square feet

9. Total Onsite (within property boundary) Newly Constructed Impervious Surface (*in square feet*):

Buildings/Lots	9,914
Impervious Pavement	9,991
Pervious Pavement (adj. total, with 75 % credit applied)	2,498
Impervious Sidewalks	1,516
Pervious Sidewalks (adj. total, with % credit applied)	
Other (describe) SIDEWALK ON WOOSTER ST	2,607
Future Development	
<b>Total Onsite Newly Constructed Impervious Surface</b>	<b>26,526</b>

10. Total Onsite Impervious Surface

(Existing Impervious Surface to remain + Onsite Newly Constructed Impervious Surface) = 26,526 square feet

11. Project percent of impervious area: (Total Onsite Impervious Surface / Total Project Area) x100 = 40 %

**12. Total Offsite Newly Constructed Impervious Area** (improvements made outside of property boundary, in square feet):

Impervious Pavement	
Pervious Pavement (adj. total, with % credit applied)	
Impervious Sidewalks	1,327
Pervious Sidewalks (adj. total, with % credit applied)	
Other (describe)	
<b>Total Offsite Newly Constructed Impervious Surface</b>	<b>1,327</b>

**13. Total Newly Constructed Impervious Surface**

(Total Onsite + Offsite Newly Constructed Impervious Surface) = 27853 square feet

**14. Complete the following information for each Stormwater BMP drainage area. If there are more than three drainage areas in the project, attach an additional sheet with the information for each area provided in the same format as below. Low Density projects may omit this section and skip to Section V.**

Basin Information	PC BMP # 1	PC BMP # 2	INFILTRATION BMP # 3
Receiving Stream Name	Cape Fear	Cape Fear	Cape Fear
Receiving Stream Index Number	18-75	18-75	18-75
Stream Classification	SC/SW	SC/SW	SC/SW
Total Drainage Area (sf)	22651.2	10890	14810.4
On-Site Drainage Area (sf)	22651.2	10890	14810.4
Off-Site Drainage Area (sf)			
<b>Total Impervious Area (sf)</b>	<b>8889</b>	<b>3600</b>	<b>8432</b>
Buildings/Lots (sf)	6131	0	3783
Impervious Pavement (sf)	0	2680	4313
Pervious Pavement, % credit (sf)	1778	720	0
Impervious Sidewalks (sf)	980	200	336
Pervious Sidewalks, % credit (sf)			
Other (sf)			0
Future Development (sf)			
Existing Impervious to remain (sf)			
Offsite (sf)			
Percent Impervious Area (%)	39.2	33	56.9

**15. How was the off-site impervious area listed above determined? Provide documentation:**

N/A

12. Total Offsite Newly Constructed Impervious Area (improvements made outside of property boundary, in square feet):

Impervious Pavement	
Pervious Pavement (adj. total, with % credit applied)	
Impervious Sidewalks	1,327
Pervious Sidewalks (adj. total, with % credit applied)	
Other (describe)	
<b>Total Offsite Newly Constructed Impervious Surface</b>	<b>1,327</b>

13. Total Newly Constructed Impervious Surface

(Total Onsite + Offsite Newly Constructed Impervious Surface) = 27853.35 square feet

14. Complete the following information for each Stormwater BMP drainage area. If there are more than three drainage areas in the project, attach an additional sheet with the information for each area provided in the same format as below. Low Density projects may omit this section and skip to Section V.

Basin Information	OTHER BMP #	BMP #	BMP #
Receiving Stream Name	Cape Fear		
Receiving Stream Index Number	18-75		
Stream Classification	SC/SW	SC/SW	SC/SW
Total Drainage Area (sf)	17424.4	0	0
On-Site Drainage Area (sf)	17424.4		
Off-Site Drainage Area (sf)			
<b>Total Impervious Area (sf)</b>	<b>5605</b>	<b>0</b>	<b>0</b>
Buildings/Lots (sf)			
Impervious Pavement (sf)			
Pervious Pavement, % credit (sf)			0
Impervious Sidewalks (sf)	5605	0	
Pervious Sidewalks, % credit (sf)			
Other (sf)			0
Future Development (sf)			
Existing Impervious to remain (sf)			
Offsite (sf)			
Percent Impervious Area (%)	32.17		

15. How was the off-site impervious area listed above determined? Provide documentation:

N/A

## **V. SUBMITTAL REQUIREMENTS**

1. **Supplemental and Operation & Maintenance Forms** - One applicable City of Wilmington Stormwater BMP supplement form and checklist must be submitted for **each** BMP specified for this project. One applicable proposed operation and maintenance (O&M) form must be submitted for **each type** of stormwater BMP. Once approved, the operation and maintenance forms must be referenced on the final plat and recorded with the register of deeds office.
2. **Deed Restrictions and Restrictive Covenants** - For all subdivisions, outparcels, and future development, the appropriate property restrictions and protective covenants are required to be recorded prior to the sale of any lot. Due to variability in lot sizes or the proposed BUA allocations, a table listing each lot number, lot size, and the allowable built-upon area must be provided as an attachment to the completed and notarized deed restriction form. The appropriate deed restrictions and protective covenants forms can be downloaded at the link listed in section V (3). Download the latest versions for each submittal.

In instances where the applicant is different than the property owner, it is the responsibility of the property owner to sign the deed restrictions and protective covenants form while the applicant is responsible for ensuring that the deed restrictions are recorded.

**By the notarized signature(s) below, the permit holder(s) certify that the recorded property restrictions and protective covenants for this project, if required, shall include all the items required in the permit and listed on the forms available on the website, that the covenants will be binding on all parties and persons claiming under them, that they will run with the land, that the required covenants cannot be changed or deleted without concurrence from the City of Wilmington, and that they will be recorded prior to the sale of any lot.**

3. **Only complete application packages** will be accepted and reviewed by the City. A complete package includes all of the items listed on the City Engineering Plan Review Checklist, including the fee. Copies of the Engineering Plan Review Checklist, all Forms, Deed Restrictions as well as detailed instructions on how to complete this application form may be downloaded from:

<http://www.wilmingtonnc.gov/PublicServices/Engineering/PlanReview/StormwaterPermits.aspx>

The complete application package should be submitted to the following address:

City of Wilmington – Engineering  
Plan Review Section  
414 Chestnut Street, Suite 200  
Wilmington, NC 28402

## VI. CONSULTANT INFORMATION AND AUTHORIZATION

1. Applicant: Complete this section if you wish to designate authority to another individual and/or firm (such as a consulting engineer and /or firm) so that they may provide information on your behalf for this project (such as addressing requests for additional information).

Consulting Engineer: Marie Peedin, PE

Consulting Firm: Pamlico Engineering Services, PLLC

- a. Contact information for consultant listed above:

Mailing Address: 128 Abbey Lane

City: Washington

State: NC

Zip: 27889

Phone: 252-945-2983

Fax: \_\_\_\_\_

Email: mpeedin@pamlicoengineeringservices.com

## VII. PROPERTY OWNER AUTHORIZATION (If Section III(2) has been filled out, complete this section)

I, (print or type name of person listed in Contact Information, item 2) \_\_\_\_\_, certify that I own the property identified in this permit application, and thus give permission to (print or type name of person listed in Contact Information, item 1) Barnes Boykin with (print or type name of organization listed in Contact Information, item 1) Eastern Piedra, Inc. to develop the project as currently proposed. A copy of the lease agreement or pending property sales contract has been provided with the submittal, which indicates the party responsible for the operation and maintenance of the stormwater system.

As the legal property owner I acknowledge, understand, and agree by my signature below, that if my designated agent (entity listed in Contact Information, item 1) dissolves their company and/or cancels or defaults on their lease agreement, or pending sale, responsibility for compliance with the City of Wilmington Stormwater Permit reverts back to me, the property owner. As the property owner, it is my responsibility to notify the City of Wilmington immediately and submit a completed Name/Ownership Change Form within 30 days; otherwise I will be operating a stormwater treatment facility without a valid permit. I understand that the operation of a stormwater treatment facility without a valid permit is a violation of the City of Wilmington Municipal Code of Ordinances and may result in appropriate enforcement including the assessment of civil penalties.

Signature: Jamie R. Thomason, G.P. by Kirby T. Tyson, AIF Date: 2/25/14

SEAL

Kay Reesman Bowles  
NOTARY PUBLIC SEAL  
Cumberland County, NC  
My Commission Expires:

4/12/2014

I, Kay Reesman Bowles, a Notary Public for the State of North Carolina County of Cumberland, do hereby certify that Kirby T. Tyson, AIF personally appeared before me this day of 25 Fe., 2014, and acknowledge the due execution of the application for a stormwater permit. Witness my hand and official seal.  
Kay Reesman Bowles  
My commission expires: 4/12/2014

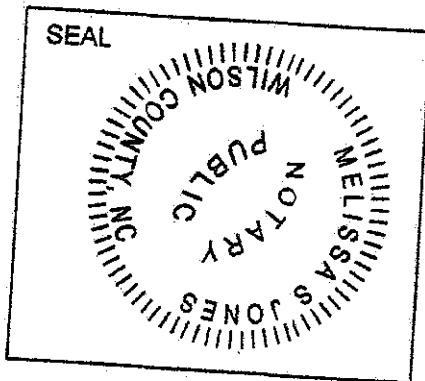


**VIII. APPLICANT'S CERTIFICATION**

I, (print or type name of person listed in Contact Information, item 1) Barnes Boykin certify that the information included on this permit application form is, to the best of my knowledge, correct and that the project will be constructed in conformance with the approved plans, that the required deed restrictions and protective covenants will be recorded, and that the proposed project complies with the requirements of the applicable stormwater rules under.

Signature: *Barnes Boykin*

Date: 2/20/14



I, Melissa S. Jones, a Notary Public for the State of North Carolina, County of Wilson, do hereby certify that Barnes Boykin personally appeared before me this day of February 20, 2014, and acknowledge the due execution of the application for a stormwater permit. Witness my hand and official seal,

*Melissa S. Jones*  
My commission expires: June 10, 2018



STORMWATER MANAGEMENT PERMIT APPLICATION FORM  
401 CERTIFICATION APPLICATION FORM  
**PERMEABLE PAVEMENT SUPPLEMENT**

Permit No. \_\_\_\_\_  
(to be provided by DWQ)



*This form must be completely filled out, printed and submitted.*

*The Required Items Checklist (Part III) must be printed, filled out and submitted along with all of the required information.*

SCANNED

**I. PROJECT INFORMATION**

Project Name	Family Dollar
Contact Person	Marie Peedin
Phone Number	2529452983
Date	10/8/2014
Drainage Area	1

**II. DESIGN INFORMATION**

**Soils Report Summary**

Hydrologic soil group (HSG) of subgrade  
Infiltration rate

B	
1.74	in/hr

**Pavement Design Summary**

Permeable Pavement (PP) design type

Infiltration - HSG A/B

BUA Credit for Permeable Pavement Footprint:  
75% BUA Credit

SA of PP being proposed ( $A_p$ )

7,111	ft <sup>2</sup>
-------	-----------------

Resulting BUA counted as impervious for main application form

1,778	ft <sup>2</sup>
-------	-----------------

Adjacent BUA directed to PP ( $A_c$ )

7,111	ft <sup>2</sup>
-------	-----------------

OK

Ratio of  $A_c$  to  $A_p$

1.00	(unitless)
------	------------

OK

Flow from pervious surfaces is directed away from PP?

Yes
-----

OK

Design rainfall depth

1.5"	in
------	----

Permeable pavement surface course type

PC
----

Layer 1 - Washed aggregate size (ex. No. 57)

12
----

Layer 1 - Aggregate porosity (n)

0.40	(unitless)
------	------------

OK

Layer 2 - Washed aggregate size (ex. No. 57)

Layer 2 - Aggregate porosity (n)

	(unitless)
--	------------

Minimum total aggregate depth for design rainfall ( $D_{wq}$ )

7.5	in
-----	----

Drawdown/infiltration time for  $D_{wq}$

0.4	days
-----	------

OK

How is 10-yr, 24-hr storm handled?

bypassed
----------

Underdrain Required

Aggregate depth to infiltrate 10-yr, 24-hr storm ( $D_{10}$ )

0.0	in
-----	----

Drawdown/infiltration time of 10-yr, 24-hr storm

0.00	days
------	------

Actual provided total aggregate depth

12.0	in
------	----

OK

Top of aggregate base layer elevation

30.95	fmsl
-------	------

Storage elevation of design rainfall depth

30.87	fmsl
-------	------

Overflow elevation

31.45	fmsl
-------	------

Bottom elevation at subgrade

29.95	fmsl
-------	------

SHWT elevation

27.50	fmsl
-------	------

Underdrain diameter

	in
--	----

#REF!

**Detention Systems** (skip for infiltration systems)

Diameter of orifice	_____	in
Coefficient of discharge ( $C_d$ )	_____	(unitless)
Driving head ( $H_o$ )	_____	ft
Storage volume discharge rate (through discharge orifice)	_____	ft <sup>3</sup> /sec
Storage volume drawdown time	_____	days
Pre-development 1-yr, 24-hr peak flow	_____	ft <sup>3</sup> /sec
Post-development 1-yr, 24-hr peak flow	_____	ft <sup>3</sup> /sec

**Additional Information**

Slope of soil subgrade at bottom of permeable pavement	0.00	%	OK
Slope of the permeable pavement surface	0.50	%	OK
Construction sequence minimizes compaction to soils?	Yes		OK
Subsoil preparation specified (must select one)	scarified		
Meets industry standards for structural requirements?	Yes		OK
Washed stone is specified for the aggregate?	Yes		OK
Required signage specified on plans?	Yes		OK
Number of observation wells provided	1		OK
Distance to structure	10.00	ft	
Distance to surface waters	na	ft	OK
Distance to water supply well(s)	na	ft	OK



STORMWATER MANAGEMENT PERMIT APPLICATION FORM  
401 CERTIFICATION APPLICATION FORM  
**PERMEABLE PAVEMENT SUPPLEMENT**



*This form must be completely filled out, printed and submitted.  
The Required Items Checklist (Part III) must be printed, filled out and submitted along with all of the required information.*

I. PROJECT INFORMATION	
Project Name	Family Dollar
Contact Person	Marie Peedin
Phone Number	2529452983
Date	10/8/2014 rev 10/28/14
Drainage Area	2

II. DESIGN INFORMATION	
<b>Soils Report Summary</b>	
Hydrologic soil group (HSG) of subgrade	B
Infiltration rate	1.74 in/hr
<b>Pavement Design Summary</b>	
Permeable Pavement (PP) design type	Infiltration - HSG A/B
SA of PP being proposed ( $A_p$ )	2,880 $\text{ft}^2$
Resulting BUA counted as impervious for main application form	720 $\text{ft}^2$
Adjacent BUA directed to PP ( $A_c$ )	2,880 $\text{ft}^2$ OK
Ratio of $A_c$ to $A_p$	1.00 (unitless) OK
Flow from pervious surfaces is directed away from PP?	Yes OK
Design rainfall depth	1.5" in
Permeable pavement surface course type	PC
Layer 1 - Washed aggregate size (ex. No. 57)	8
Layer 1 - Aggregate porosity (n)	0.40 (unitless) OK
Layer 2 - Washed aggregate size (ex. No. 57)	
Layer 2 - Aggregate porosity (n)	(unitless)
Minimum total aggregate depth for design rainfall ( $D_{wq}$ )	7.5 in
Drawdown/infiltration time for $D_{wq}$	0.4 days OK
How is 10-yr, 24-hr storm handled?	bypassed Underdrain Required
Aggregate depth to infiltrate 10-yr, 24-hr storm ( $D_{10}$ )	0.0 in
Drawdown/infiltration time of 10-yr, 24-hr storm	0.00 days
Actual provided total aggregate depth	8.0 in OK
Top of aggregate base layer elevation	31.00 fmsl
Storage elevation of design rainfall depth	31.60 fmsl
Overflow elevation	31.50 fmsl
Bottom elevation at subgrade	30.33 fmsl
SHWT elevation	27.00 fmsl
Underdrain diameter	in

BUA Credit for Permeable Pavement Footprint:  
75% BUA Credit

#REF!

**Detention Systems** (skip for infiltration systems)

Diameter of orifice	_____	in
Coefficient of discharge ( $C_d$ )	_____	(unitless)
Driving head ( $H_o$ )	_____	ft
Storage volume discharge rate (through discharge orifice)	_____	ft <sup>3</sup> /sec
Storage volume drawdown time	_____	days
Pre-development 1-yr, 24-hr peak flow	_____	ft <sup>3</sup> /sec
Post-development 1-yr, 24-hr peak flow	_____	ft <sup>3</sup> /sec

**Additional Information**

Slope of soil subgrade at bottom of permeable pavement	0.00	%	OK
Slope of the permeable pavement surface	0.50	%	OK
Construction sequence minimizes compaction to soils?	Yes		OK
Subsoil preparation specified (must select one)	scarified		
Meets industry standards for structural requirements?	Yes		OK
<u>Washed</u> stone is specified for the aggregate?	Yes		OK
Required signage specified on plans?	Yes		OK
Number of observation wells provided	1		OK
Distance to structure	10.00	ft	
Distance to surface waters	na	ft	OK
Distance to water supply well(s)	na	ft	OK



STORMWATER MANAGEMENT PERMIT APPLICATION FORM  
401 CERTIFICATION APPLICATION FORM  
**INFILTRATION BASIN SUPPLEMENT**



*This form must be filled out, printed and submitted.*

*The Required Items Checklist (Part III) must be printed, filled out and submitted along with all of the required information.*

**I. PROJECT INFORMATION**

Project Name	Family Dollar Wooster Street
Contact Person	Marie Peedin
Phone Number	252 945 2983
Date	2/25/2014 REVISED 5 14 14 REV 2 6 27 14 10/8/14 10/28/14
Drainage Area Number	3

**II. DESIGN INFORMATION**

**Site Characteristics**

Drainage area	14,810.00	ft <sup>2</sup>
Impervious area	8,432.00	ft <sup>2</sup>
Percent impervious	56.93	%
Design rainfall depth	1.50	in

**Peak Flow Calculations**

1-yr, 24-hr rainfall depth	3.60	in
1-yr, 24-hr intensity	0.15	in/hr
Pre-development 1-yr, 24-hr discharge	0.40	ft <sup>3</sup> /sec
Post-development 1-yr, 24-hr discharge	0.57	ft <sup>3</sup> /sec
Pre/Post 1-yr, 24-hr peak flow control	0.17	ft <sup>3</sup> /sec

**Storage Volume: Non-SA Waters**

Minimum design volume required	1,301.78	ft <sup>3</sup>	
Design volume provided	3,864.00	ft <sup>3</sup>	OK for non-SA waters

**Storage Volume: SA Waters**

1.5" runoff volume		ft <sup>3</sup>
Pre-development 1-yr, 24-hr runoff volume		ft <sup>3</sup>
Post-development 1-yr, 24-hr runoff volume		ft <sup>3</sup>
Minimum required volume		ft <sup>3</sup>
Volume provided		ft <sup>3</sup>

**Soils Report Summary**

Soil type	Leob Urban
Infiltration rate	1.74 in/hr
SHWT elevation	27.50 fmsl

**Basin Design Parameters**

Drawdown time	0.11	days	OK
Basin side slopes	4.00	:1	OK
Basin bottom elevation	29.50	fmsl	OK
Storage elevation	30.70	fmsl	
Storage Surface Area	2,872.00	ft <sup>2</sup>	
Top elevation	31.20	fmsl	

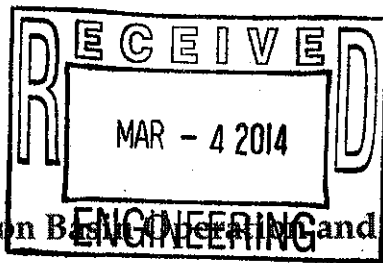
**Basin Bottom Dimensions**

Basin length	45.00	ft
Basin width	45.00	ft
Bottom Surface Area	2,045.00	ft <sup>2</sup>

**Additional Information**

Maximum runoff to each inlet to the basin?  
 Length of vegetative filter for overflow  
 Distance to structure  
 Distance from surface waters  
 Distance from water supply well(s)  
 Separation from impervious soil layer  
 Naturally occurring soil above shwt  
 Bottom covered with 4-in of clean sand?  
 Proposed drainage easement provided?  
 Captures all runoff at ultimate build-out?  
 Bypass provided for larger storms?  
 Pretreatment device provided

0.01	ac-in	OK
0.00	ft	Filter is too short, must be > 30-ft
55.00	ft	OK
na	ft	OK
na	ft	OK
4.00	ft	OK
2.00	ft	OK
y	(Y or N)	OK
y	(Y or N)	OK
y	(Y or N)	OK
y	(Y or N)	OK
forebay		



Permit Number: \_\_\_\_\_  
 (to be provided by DWQ)  
 Drainage Area Number: \_\_\_\_\_

## Infiltration Basin Operation and Maintenance Agreement

I will keep a maintenance record on this BMP. This maintenance record will be kept in a log in a known set location. Any deficient BMP elements noted in the inspection will be corrected, repaired or replaced immediately. These deficiencies can affect the integrity of structures, safety of the public, and the removal efficiency of the BMP.

### Important maintenance procedures:

- The drainage area will be carefully managed to reduce the sediment load to the infiltration basin.
- Immediately after the infiltration basin is established, the vegetation will be watered twice weekly if needed until the plants become established (commonly six weeks).
- No portion of the infiltration basin will be fertilized after the initial fertilization that is required to establish the vegetation.
- The vegetation in and around the basin will be maintained at a height of approximately six inches.

After the infiltration basin is established, it will be inspected **once a quarter and within 24 hours after every storm event greater than 1.0 inches (or 1.5 inches if in a Coastal County)**. Records of operation and maintenance will be kept in a known set location and will be available upon request.

Inspection activities shall be performed as follows. Any problems that are found shall be repaired immediately.

BMP element:	Potential problem:	How I will remediate the problem:
The entire BMP	Trash/debris is present.	Remove the trash/debris.
The perimeter of the infiltration basin	Areas of bare soil and/or erosive gullies have formed.	Regrade the soil if necessary to remove the gully, and then plant a ground cover and water until it is established. Provide lime and a one-time fertilizer application.
The inlet device: pipe or swale	The pipe is clogged (if applicable).	Unclog the pipe. Dispose of the sediment off-site.
	The pipe is cracked or otherwise damaged (if applicable).	Replace the pipe.
	Erosion is occurring in the swale (if applicable).	Regrade the swale if necessary to smooth it over and provide erosion control devices such as reinforced turf matting or riprap to avoid future problems with erosion.



<b>BMP element:</b>	<b>Potential problem:</b>	<b>How I will remediate the problem:</b>
<b>The forebay</b>	Sediment has accumulated and reduced the depth to 75% of the original design depth.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams or the BMP.
	Erosion has occurred or riprap is displaced.	Provide additional erosion protection such as reinforced turf matting or riprap if needed to prevent future erosion problems.
	Weeds are present.	Remove the weeds, preferably by hand. If pesticides are used, wipe them on the plants rather than spraying.
<b>The main treatment area</b>	A visible layer of sediment has accumulated.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams or the BMP. Replace any media that was removed in the process. Revegetate disturbed areas immediately.
	Water is standing more than 5 days after a storm event.	Replace the top few inches of filter media and see if this corrects the standing water problem. If so, revegetate immediately. If not, consult an appropriate professional for a more extensive repair.
	Weeds and noxious plants are growing in the main treatment area.	Remove the plants by hand or by wiping them with pesticide (do not spray).
<b>The embankment</b>	Shrubs or trees have started to grow on the embankment.	Remove shrubs or trees immediately.
	An annual inspection by an appropriate professional shows that the embankment needs repair.	Make all needed repairs.
<b>The outlet device</b>	Clogging has occurred.	Clean out the outlet device. Dispose of the sediment off-site.
	The outlet device is damaged	Repair or replace the outlet device.
<b>The receiving water</b>	Erosion or other signs of damage have occurred at the outlet.	Contact the NC Division of Water Quality 401 Oversight Unit at 919-733-1786.

Permit Number: \_\_\_\_\_  
(to be provided by DWQ)

I acknowledge and agree by my signature below that I am responsible for the performance of the maintenance procedures listed above. I agree to notify DWQ of any problems with the system or prior to any changes to the system or responsible party.

Project name: FAMILY DOLLAR WOOSTER STREET

BMP drainage area number 1, 2 & 3 PH

Print name: BARNES BOYKIN

Title: VICE PRESIDENT

Address: 2405 F NASH STREET WILSON NC 27896

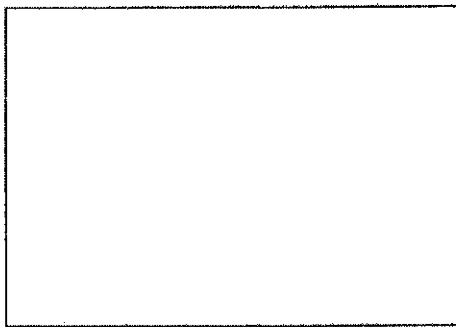
Phone: 2522300632

Signature: Barnes Boykin

Date: 2/25/14

Note: The legally responsible party should not be a homeowners association unless more than 50% of the lots have been sold and a resident of the subdivision has been named the president.

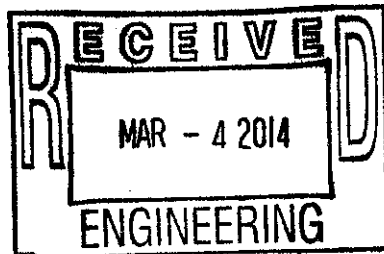
I, Marsha A. Braswell, a Notary Public for the State of NC, County of Wilson, do hereby certify that Barnes Boykin personally appeared before me this 25<sup>th</sup> day of February, 2014, and acknowledge the due execution of the foregoing infiltration basin maintenance requirements. Witness my hand and official seal,



SEAL

My commission expires 05/10/15

Marsha A. Braswell  
Notary Public



Permit Number: \_\_\_\_\_  
(to be provided by DWQ)

Drainage Area / Lot Number: \_\_\_\_\_

## Permeable Pavement Operation and Maintenance Agreement

I will keep a maintenance record on this BMP. This maintenance record will be kept in a log in a known set location. Any deficient BMP elements noted in the inspection will be corrected, repaired or replaced immediately. These deficiencies can affect the integrity of structures, safety of the public, and the removal efficiency of the BMP.

At all times, the pavement shall be kept free of:

- Debris and particulate matter through frequent blowing that removes such debris, particularly during the fall and spring.
- Piles of soil, sand, mulch, building materials or other materials that could deposit particulates on the pavement.
- Piles of snow and ice.
- Chemicals of all kinds, including deicers.

The permeable pavement will be inspected **once a quarter**. Records of operation and maintenance will be kept in a known set location and will be available upon request.

Inspection activities shall be performed as follows. Any problems that are found shall be repaired immediately.

BMP element:	Potential problem:	How to remediate the problem:
The perimeter of the permeable pavement	Areas of bare soil and/or erosive gullies	Regrade the soil if necessary to remove the gully, then plant ground cover and water until established.
	A vegetated area drains toward the pavement.	Regrade the area so that it drains away from the pavement, then plant ground cover and water until established.
The surface of the permeable pavement	Trash/debris present	Remove the trash/debris.
	Weeds	Do not pull the weeds (may pull out media as well). Spray them with a systemic herbicide such as glyphosate and then return within the week to remove them by hand. (Another option is to pour boiling water on them or steam them.)
	Sediment Rutting, cracking or slumping or damaged structure	Vacuum sweep the pavement. Consult an appropriate professional.
Observation well	Water present more than five days after a storm event	Clean out clogged underdrain pipes. Consult an appropriate professional for clogged soil subgrade.
Educational sign	Missing or is damaged.	Replace the sign.

Permit Number: \_\_\_\_\_  
(to be provided by DWQ)

I acknowledge and agree by my signature below that I am responsible for the performance of the maintenance procedures listed above. I agree to notify DWQ of any problems with the system or prior to any changes to the system or responsible party.

Project name: FAMILY DOLLAR WOOSTER

BMP drainage area or lot number: 1 AND 2

Print name: BARNES BOYKIN

Title: VICE PRESIDENT

Address: 2405-F NASH STREET WILSON NC 27896

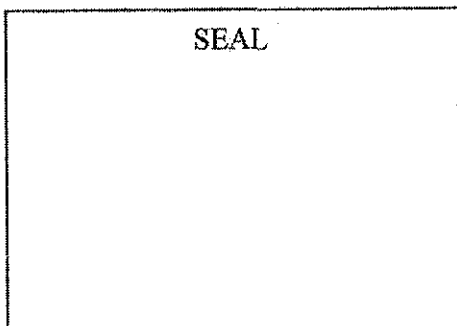
Phone: 2522300632

Signature: Barnes Boykin

Date: 2-25-14

Note: The legally responsible party should not be a homeowners association unless more than 50% of the lots have been sold and a resident of the subdivision has been named the president.

I, Marsha A. Braswell, a Notary Public for the State of  
NC, County of Wilson, do hereby certify that  
Barnes Boykin personally appeared before me this 25<sup>th</sup>  
day of February, 2014, and acknowledge the due execution of the  
forgoing permeable pavement maintenance requirements. Witness my hand and official  
seal,



My commission expires 05/10/15

Marsha A. Braswell  
Notary Public